

PROCEEDINGS OF THE NEW YORK ENTOMOLOGICAL SOCIETY

Note: All meetings held in Room 129 of the American Museum of Natural History at 8:00 P.M. unless otherwise stated.

MEETING OF OCTOBER 2, 1962

President Schmitt presided, 22 members and 4 guests were present. It was announced that two of our Honorary Members had died during the summer: Dr. Axel L. Melander at the age of 84 on August 14 and Dr. Robert E. Snodgrass at the age of 87 on September 4th. The resignation of our Vice-president, Dr. Daniel Ludwig was read. The heart attack he suffered last March makes it necessary to limit his activities.

PROGRAM Summer Activities was opened by Dr. Asher Treat. He reported that a group of English investigators has determined that sound production in certain Arctiid moths is by tymbal organs akin to those of the cicadas; ribbed concave membranes are buckled to produce pulses of ultrasound. The sound is made when the moth is disturbed. A moth has responded to artificially produced ultrasounds simulating that of bats. This suggests that bats may be able to distinguish these moths acoustically. Dr. Teale observed blue-jays shaking a bush to knock down the Japanese beetles from it. They, then, picked the beetles from the ground. He, also, commented that chimney swifts coat the twigs of their nests with their saliva to make them fireproof. Miss Alice Gray described a Malaise type of insect trap that is large enough to collect hundreds of flying insects in a 24-hour period. Dr. Klots found whole biological communities in logs associated with carpenter ants, which were common this year. These forms include fungi, slug-like Syrphid larvae (*Microdon sp.*), a Staphylinid beetle (*Xenodusa cava*), and ant-loving beetles (Pselaphidae), all have some relationship to the ants, *Camponotus ferrugineus*. Interest was expressed in Rachel Carson's new and controversial book, "Silent Spring." A number of color slides were shown.

PETER H. DIX, SEC.

MEETING OF OCTOBER 16, 1962

Dr. Asher Treat was the Chairman in the absence of the President who was speaking in Philadelphia. Sixteen members and 5 guests were present. The death of Mr. Lionel Lacey of the Museum staff who had been a Society member for over 30 years was reported. Mr. Lacey, a specialist on Coleoptera and particularly the Cerambycidae, died on October 11, at the age of 89.

PROGRAM Dr. Herbert Ruckes gave an interesting, illustrated report of his recent field trip in Central America entitled, **Collecting in Panama and Costa Rica**. This trip which lasted 3½ months was for the purpose of collecting Hemiptera and studying their food plant associations.

PETER H. DIX, SEC.

NOVEMBER 6, 1962 —ELECTION DAY—NO MEETING

MEETING OF NOVEMBER 20, 1962

Dr. Schmitt presided with 21 members and 8 guests present. Dr. Pedro Wygodzinsky of the Museum staff was proposed for membership. Dr. and Mrs. Vishniac displayed a Japanese made cicada-shaped pill box and a necklace strung with scarab beetles. Dr. Klots had a rare salamander from the Wachung Reservation on exhibit.

PROGRAM Miss Rosemary Kenedy of Fordham University talked on **Some Field Observations Made at Simla**. She discussed the work of a few years previous with the late Dr. William Beebe and his associate, Jocelyn Crane, at the Biological Station in Trinidad.

The work dealt with factors governing mating and social behavior of Heliconid butterflies. With dye-painting techniques it was discovered that the long wave-length color, red, is important for courtship. When the natural red coloration on their wings was painted blue or a color reflecting the short wave-lengths of light, a female "became, literally, a wall-flower"; males were less seriously affected. Males and female scents were also important; the male scent is detectable by humans. Miss Kenedy presented a superb, colored motion picture made by her in connection with this project, entitled "Butterflies, Weeds and a Curious Caterpillar."

PETER H. DIX, SEC.

MEETING OF DECEMBER 4, 1962

Dr. Herbert Ruckes served as Chairman in the absence of Dr. Schmitt who was unable to be present. Twenty-three members and 3 guests were present. Dr. Wygodzinsky was unanimously elected to membership.

PROGRAM Dr. Alexander B. Klots presented **Some Experiences with Insects**. His informative and interesting presentation, illustrated with color-slides, ranged over a wide area. Included were carpenter ants and their nest sites, Syrphid fly larvae and pupae, moths and butterflies illustrating melanism and other forms of protective coloration, frogs, a beaver dam, and some flora and fauna of sphagnum bogs.

PETER H. DIX, SEC.

MEETING OF DECEMBER 18, 1962

Dr. Schmitt presided, 24 members and 10 guests were present. Mr. Heineman mentioned the recent death of Mr. E. Irving Huntington and commented upon the long membership Mr. Huntington had in the Society and the many, many services he performed for it.

PROGRAM Dr. Pedro Wygodzinsky of the American Museum staff spoke on **Collecting Experiences, from Tierra del Fuego to Bolivia**. He discussed climatology, biogeography, and ecology pertinent to this area. The *Nothofagus* forest common throughout much of the Southern Hemisphere in Australia, New Zealand, New Guinea, and Tasmania, is, also, present in this region of South America. The distribution of this forest raises interesting problems concerning the distribution and the evolution of the insects associated with it. His talk was illustrated with many, very fine color-slides.

It was announced there would be no meeting on the first Tuesday in January, 1963. This date is New Year's Day.

PETER H. DIX, SEC.

MEETING OF JANUARY 15, 1963

President Schmitt presided, 24 members and 10 guests were present. The Nominating Committee, composed of Drs. Asher Treat, Herbert Ruckes, and Elsie Klots, Chairman, presented the following slate of candidates, which was elected:

President—	Mr. Bernard Heineman
Vice-President—	Dr. Jerome G. Rozen, Jr.
Secretary—	Dr. Richard W. Fredrickson
Assistant Secretary—	Miss Alice Gray
Treasurer—	Mr. J. Huberman
Assistant Treasurer—	Mrs. Patricia Vaurie
Trustees—	Dr. Edmund R. Janvrin Mr. Lucien Pohl
	Dr. Alexander B. Klots Dr. John B. Schmitt
Editor—	Dr. Lucy W. Clausen
Associate Editor—	Dr. James Forbes
Publication Committee—	Dr. Herbert Ruckes Dr. John B. Schmitt

Dr. Schmitt thanked the officers and members of the Society for their cooperation and help during his term of office. It was moved by Dr. Treat and seconded and passed, that the minutes express to Dr. Schmitt the grateful appreciation of the Society for his labors and his successful efforts as president for two terms.

Mr. Heineman assumed charge of the meeting. He mentioned that Dr. Rozen would be in charge of the next few meetings while he and Mrs. Heineman were vacationing in Jamaica, W.I. Mr. Noriyuki Toyama was proposed for membership. He was elected immediately when the membership agreed to waive the By-Laws pertaining to this procedure.

PROGRAM Dr. Theodore C. Schneirla of the American Museum staff, discussed the results of a recent trip, **Collecting Legionary Ants in the Philippines**. He described the comparative behavior of members of the genera *Eciton* and *Neivamyrmex* of the doryline ants. The slides used to illustrate his talk were chiefly of the genus *Aenictus* which he studied on Negros Island and at Silliman University, Philippines. *Aenictus* shows differences of social organization, bivouac behavior, etc., which suggests this genus is ancestral to *Eciton* and *Neivamyrmex*. An analysis of the interacting factors in army ant behavior was presented. Slides showed the bivouac formations and raiding parties of army ants in both the Philippines and Panama.

RICHARD W. FREDRICKSON, SEC.

MEETING OF FEBRUARY 5, 1963

Vice-president Jerome G. Rozen presided, 25 members and 6 guests were present. Two visiting araneologists from Belleville, Ontario, Canada, Drs. Charles D. Dondale and A. L. Turnbull, were introduced. Miss Alice Gray reported on the activities of the Junior Society which now number 13. Suggestions were solicited, and volunteer drivers for field trips were requested. Two persons were proposed for membership, Dr. Donald J. Southerland of Rutgers University and Mr. Martin Hagopian of Fordham University.

PROGRAM **The Most Interesting Insect I Know**. A number of members contributed to the discussion, including the following: Dr. Herbert Ruckes who recalled old-time entomological gatherings and discussed the fulgorid known as the lantern-fly; Miss Gray described the evolution of interests in young people from showy moths to social insects; Mr. Noriyuki Toyama gave an enlightening discussion of the status of amateur entomology in Japan; Dr. Louis Marks showed slides of African papilionid butterflies exhibiting mimicry; Mr. Edwin Teale commented on the praying mantis; Mr. Lucien Pohl mentioned certain insects used as food; Mr. John Pallister showed specimens of some tropical tenebrionid beetles; Dr. John Schmitt related a legal case involving termite depredations in a bank; and Dr. Rozen discussed the extraordinary life cycles of beetles of the family Micromalthidae.

RICHARD W. FREDRICKSON, SEC.

MEETING OF FEBRUARY 19, 1963

A severe snowstorm caused cancellation of this meeting.

MEETING OF MARCH 5, 1963

Vice-president Jerome G. Rozen presided, 15 members and 4 guests were present. Dr. Donald J. Sutherland and Mr. Martin Hagopian were elected to membership. Two persons were proposed for membership: Dr. Jocelyn Crane, of the New York Zoological Society field station in Trinidad and Mr. Malcolm Barcant, of Port-au-Spain, Trinidad.

It was announced that Dr. Helen Forrest, who had been scheduled to speak at this meeting regretted that she could not be present because of illness, but she would be our

speaker on March 19. Dr. Mark Henry, the speaker scheduled for the postponed February 19th meeting will speak on April 2nd.

PROGRAM Vice-president Rozen gave a slide-illustrated discussion on **Comparative Studies of the Biology of Bees of the Genus *Nomadopsis*, and the Role of Such Studies in Systematics**. His talk described the nest sites, differences in the shapes and construction of the nests, and differences in the provisioning of the nests in some species of the genus.

RICHARD W. FREDRICKSON, SEC.

MEETING OF MARCH 19, 1963

President Bernard Heineman called the meeting to order in Room 419; 20 members and 10 guests were present. Dr. Jocelyn Crane and Mr. Malcolm Barcant were elected to membership. Dr. Vishniac displayed a book published in London in 1647, written by Mouveti entitled *Insectorum Sive Minimorum Animalium Theatorum*; Dr. Vishniac has acquired a complete set of similar early works. Mr. Tadayoshi Machinura, of Rutgers University, was introduced as a guest.

PROGRAM Dr. Helen Forrest, of Rutgers University discussed **The Production of Audible Sound by Common Ants and Its Possible Uses in Communication**. Her talk was illustrated and supplemented by tape-recorded stridulations of the ants. She stated that sounds of 25 species and varieties of ants have been recorded. Methods of sound production include snapping of joints, scraping of feet, rapping with the mandibles, and by stridulatory organs in the ponerines and the myrmicines.

Most components of these stridulations appear to fall within the human audible range and may even be detected at close range by a person with good hearing. Analysis of recordings reveals that the "songs" produced appear quite different in different genera, and may be distinctive for each species. The sexual forms of the species studied have louder, deeper "voices" and are especially sensitive to vibrations.

RICHARD W. FREDRICKSON, SEC.

MEETING OF APRIL 2, 1963

President Bernard Heineman called the meeting to order in Room 419; 17 members and eight guests were present. Dr. C. Bernard Lewis, Director of the Institute of Jamaica, Kingston, Jamaica was proposed for membership. Mr. Heineman enthusiastically endorsed the nominee, and it was proposed to suspend the rule for election to permit Dr. Lewis' election immediately. This was approved by the members present.

PROGRAM Dr. S. Mark Henry of the Boyce Thompson Institute, Yonkers, N. Y. gave a slide-illustrated talk **Endosymbiosis in Cockroaches and Other Insects**. An abstract follows.

RICHARD W. FREDRICKSON, SEC.

ENDOSYMBIOSIS IN COCKROACHES AND OTHER INSECTS

Numerous examples of that type of symbiosis in which a species of micro-organism lives within its host or partner are known in insects, but it is only in recent years that any significant progress has been made regarding the nature of this relationship. Several species containing symbiotic bacteria or yeasts in their digestive tracts are known to survive as a result of microbial breakdown of food which would otherwise be indigestible. Analyses of the more intimate relationships in which the microsymbiotes are intracellular are relatively few due to the difficulty of separating the microbe from its macrosymbiote partner. However, in those cases which have been studied experimentally in various laboratories, the evidence generally indicates a strong dependence of the insect

on the microbe located in its mycetocytes or mycetome or in specialized areas of the intestinal tract. In the case of the cockroach, the microsymbiotes synthesize (1) aromatic amino acids from glucose, (2) cysteine and methionine from sulfate, and (3) other nutrients normally required by animals. Removal of the microsymbiotes results not only in increased nutritional requirements but in other side effects such as loss of normal coloration (Brooks and Richards). Recent data indicate that failure of the aposymbiotic cockroaches to undergo cuticular melanization is directly related to inability of the symbiote-free insect to utilize glucose and other materials for synthesis of tyrosine and other compounds required for pigment formation. Control of intestinal microflora appears to be another function of the intracellular symbiotes of the cockroach.

S. MARK HENRY

MEETING OF APRIL 16, 1963

President Bernard Heineman presided; 18 members and three guests were present. Dr. Vishniac displayed another book in his series of early and rare volumes on zoology. This was the work of Francesco Stelluti, said to be the first microscopist. The illustrations in the book included detailed drawings of the anatomy of the honeybee and other insects. Mrs. Irene Y. and Mr. Robert J. Alexander were proposed for membership. Miss Alice Gray stated that the Junior Society now has 15 members.

PROGRAM Dr. Donald J. Southerland of Rutgers University gave a slide-illustrated talk on, **Experimentally Induced Tumors in Cockroaches**. An abstract follows.

RICHARD W. FREDRICKSON, SEC.

EXPERIMENTALLY INDUCED TUMORS IN COCKROACHES

Insect tumor research contributes much to the field of oncology. Four methods for the experimental production of tumors in cockroaches include (1) nerve lesion, (2) carcinogens, (3) transplantation of suboesophageal ganglia, and (4) duct ligation.

Duct ligation of the common salivary duct results in tumor development in one or more parts of the salivary system. Such growths are grossly evident within one month and are characterized by the accumulation of "inclusion cyst material" having similarities to the integument accompanied by high cell proliferation. These cells originate in part from blood cells and microscopic studies indicate that abnormal growth may begin within one day after duct ligation. Cells of the intercalated ducts may also participate. "Inclusion cyst material" apparently arises in the nuclei of all salivary gland cells and blood cells. One of the late stages of tumor development is the development of liquid containing vesicles of a single layer of cells, the source of which is uncertain at present.

Portions of salivary tumors transplanted in the abdomen or cervical region of normal cockroaches continue to grow but generally do not invade the tissues of the recipient. Tracheae have been seen to invade such transplants.

Duct ligation affects adult male and female cockroaches as well as nymphs. Generally tumor development occurs only in that portion of the gland which has been ligated. Tumors develop more rapidly in older than in young adults. Incidental tumorous growths in untreated cockroaches have been found in the abdominal trachea, salivary reservoirs, and fat body.

Investigations are continuing to determine similarities and differences between tumors induced by various means. Subsequently, the tumor biochemistry will be studied.

D. J. SUTHERLAND

MEETING OF MAY 7, 1963

President Bernard Heineman presided; 18 members and six guests were present. Mrs. Irene and Mr. Robert J. Alexander were unanimously elected to membership.

PROGRAM Prof. D. M. Jobbins of the Dept. of Entomology, Rutgers University, gave a slide-illustrated talk on **Mosquitoes and Conservation Practices in New Jersey.**

RICHARD W. FREDRICKSON, SEC.

MEETING OF MAY 21, 1963

President Bernard Heineman called the meeting to order in Room 426; 28 members and 51 guests were present.

PROGRAM Dr. Roman Vishniac presented Parts II and III of an excellent film series **The Living Tide.** This was accompanied by his own fascinating narration.

RICHARD W. FREDRICKSON, SEC.